Rotary Hoe:

A Blind Cultivation Tool for In-Row Weed Control

Expanding organic grain markets have increased interest in mechanical weed control. This publication explains how the rotary hoe may be used to control weeds in large-seeded grain crops like corn and soybean.

A rotary hoe is classified as a blind cultivation tool, meaning that it disturbs 100 percent of the soil surface without regard to crop rows.

Blind cultivators, such as the rotary hoe, are generally the most effective tools used for in-row weed control in organic field crops. Control of weeds in the row is the most difficult aspect of weed management for organic producers. More options exist for between-row weeds and the windows of opportunity for controlling between-row weeds are wider.

How the rotary hoe kills weeds

The rotary hoe pulls up or shatters weed roots, particularly newly germinated weeds (white thread stage). Some emerged weeds are buried by soil and lack enough energy reserves to emerge again. Remember, if you can see the weed from the tractor, it is probably too big to be controlled by the rotary hoe.

Figure 1. Goosegrass at white thread stage.

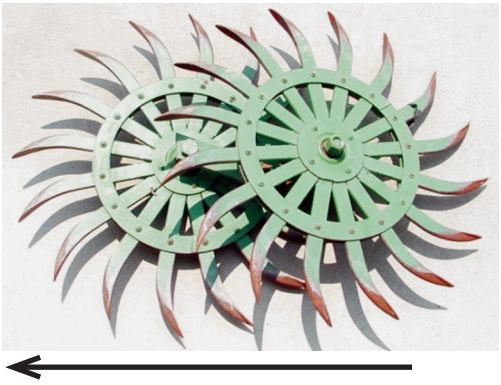

Figure 2. Direction of the rotary hoe pass.

When the rotary hoe is most effective

Hot and sunny weather helps desiccate uprooted weeds. Humid and cloudy days decrease weed desiccation and some dislodged weeds may re-establish. Weeds that have germinated but not emerged are more susceptible to dislodging. A faster rotary hoe pass (10 to 12 miles per hour) dislodges more weeds.

When the rotary hoe is least effective

- Weeds you can see from the tractor are not well controlled by the rotary hoe.
- Weeds that already have true leaves are likely to survive.
- A rotary hoe will dig too deeply in soils with high organic matter.
- Rocky soil may damage the rotary hoe. Worn tips on the wheels of the rotary hoe reduce soil disturbance and movement.

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